Draft Environmental Assessment
West Kootenai
Wildlife Management Area
Fire Salvage Project

Montana Fish, Wildlife & Parks

Region 1

Montana Fish, Wildlife & Parks

490 North Meridian Road, Kalispell, MT 59901

Phone 406-752-5501

Draft Environmental Assessment Checklist

West Kootenai Wildlife Management Area Fire Salvage Project

October 2017

Part I. Proposed Action Description

1. Type of proposed action:

Montana Fish, Wildlife & Parks (FWP) proposes to conduct a timber salvage project on 506 acres of the West Kootenai Wildlife Management Area (WKWMA). The proposed project would include the use of mechanized timber harvest to remove merchantable fire-killed timber as well as associated road maintenance work and reclamation activities. Timber harvest and associated activities would abide by all applicable laws and Montana Forestry Best Management Practices (BMPs).

2. Need for action:

Approximately 745 acres of the 917-acre WKWMA burned in the Caribou Fire under red flag weather conditions occurring on the afternoon/evening of September 2, 2017. The fire made a 4-mile run toward the community of West Kootenai, destroying 10 homes, 30 outbuildings, and burning 24,206 acres of mostly forested land before conditions finally calmed. Between 2014 and 2015, FWP completed 250 acres of thinning and fuels reduction on the WKWMA with one of the primary objectives being to reduce the risk of extreme wildfire behavior in proximity to neighboring properties and infrastructure. The fire burned from west to east and, while several structures were consumed west of the WKWMA, firefighters constructed a dozer line through the thinned areas and a portion of the fire was contained on the WKWMA. A combination of factors, including improving weather conditions and suppression actions, which were aided by the thinned areas within the WKWMA, likely resulted in a change in fire behavior and contributed to preventing further losses (see Figure 1 and Figure 2).

Approximately 599 acres of the WKWMA burned under high-intensity fire behavior. Unthinned areas, accounting for approximately 510 acres, experienced crown fire, and mortality was near 100% (see Figure 3). In the previously thinned areas (about 89 acres), the fire dropped out of the crowns, but still burned under a high-intensity surface fire resulting in high percentages of crown scorching and survival of only 5 to 10% (see Figure 4). FWP hosted a field tour on September 29, 2017, including FWP staff, a neighboring landowner, the logger and forester who implemented the thinning project in 2014-2015, and U.S. Forest Service firefighters, to survey the effects of the fire on the WKWMA. It was determined that timely salvage of the timber would be in FWP's best interest to avoid an accumulation of downed timber that could preclude ungulate movement across the landscape, promote natural regeneration of the forest where possible, and complete the work while the value of timber can cover the cost of the treatment. Any surplus revenue generated from this project could be used to fund future rehabilitation and forest management on the WKWMA as well as forest management work on other FWP properties across the state.

Figure 1 - Fire Information Map from September 5 showing fire direction when the Caribou Fire made its run.

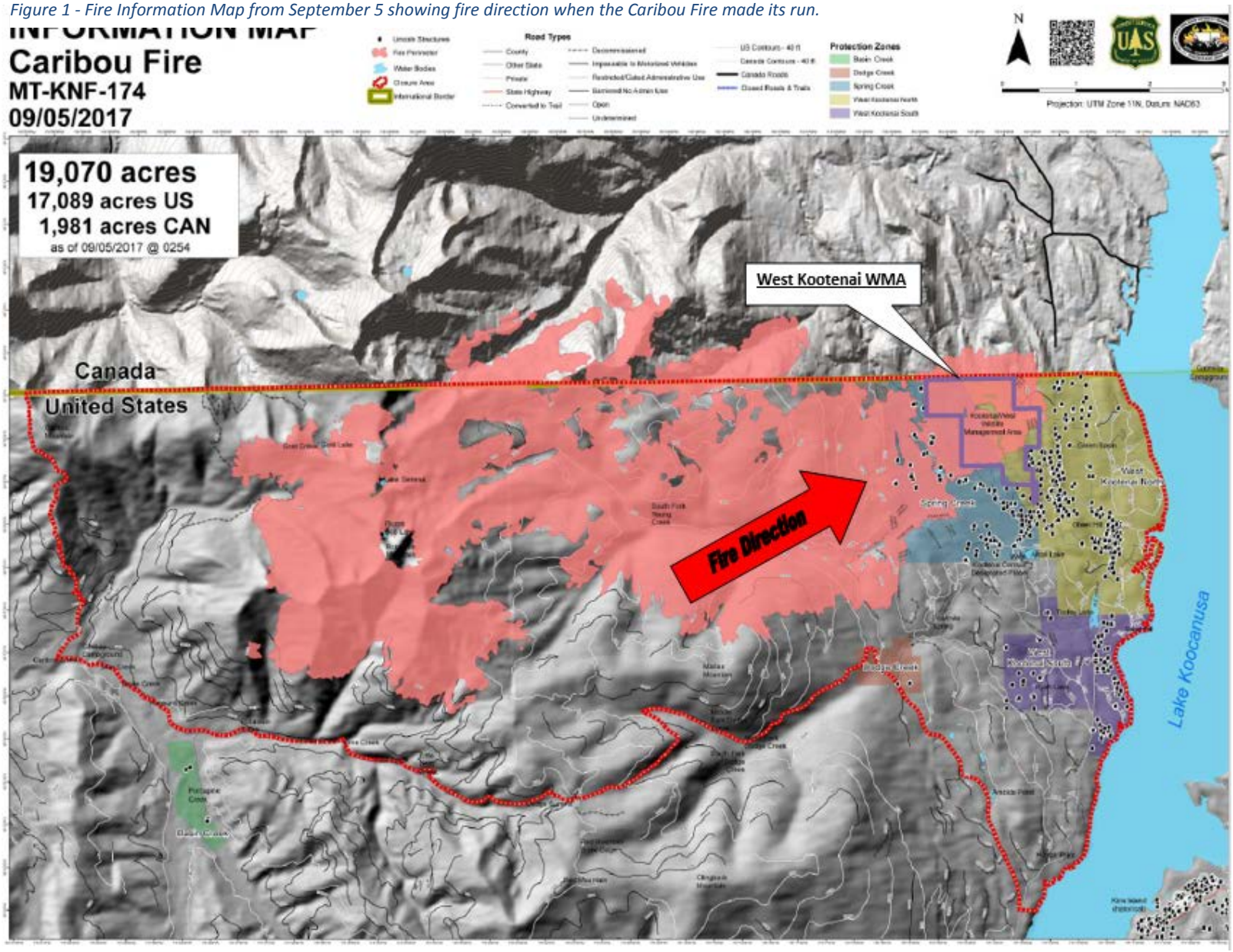


Figure 2 - Map of thinning areas implemented in 2014-2015.

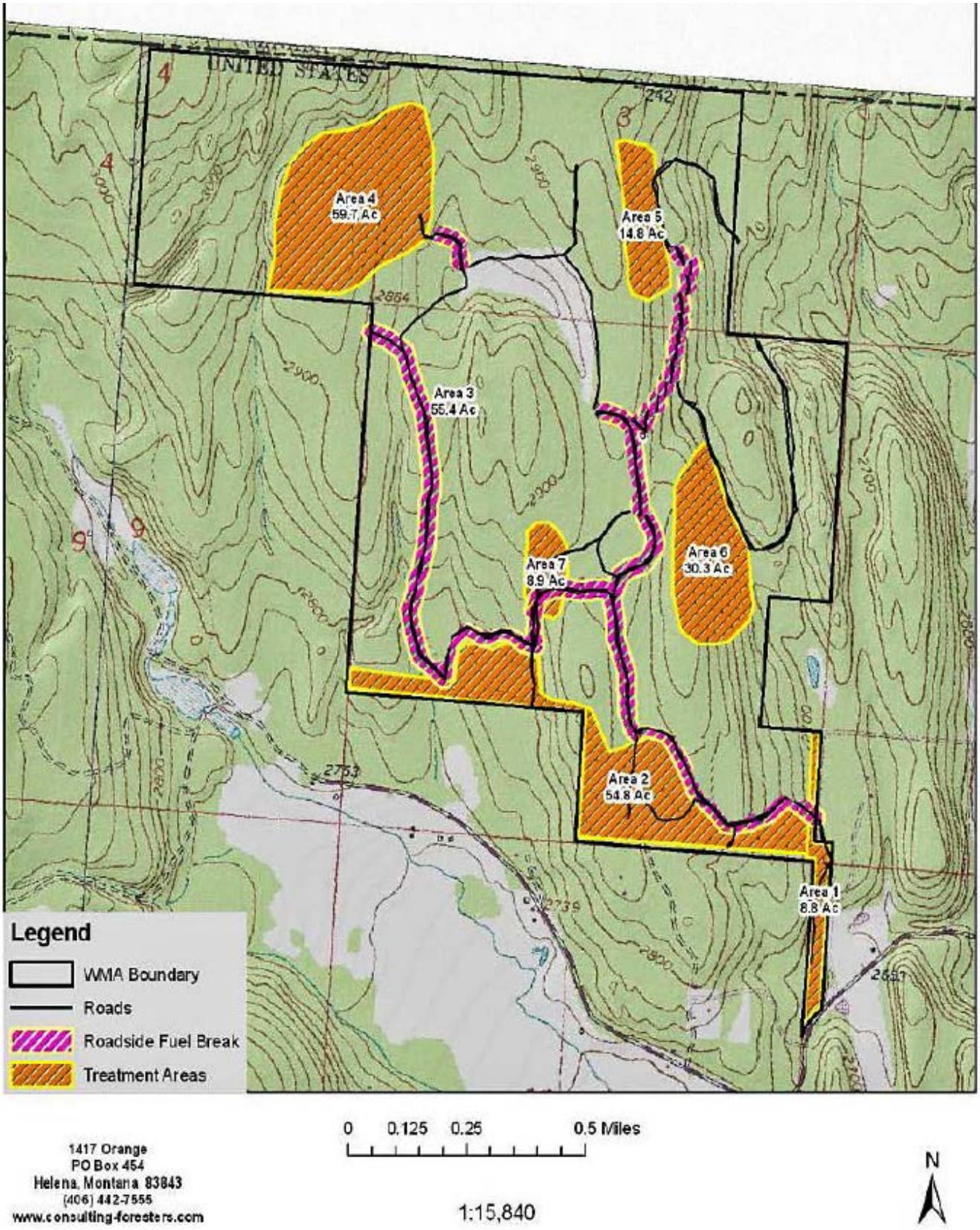


Figure 3 - Due to high fire intensity, unthinned areas were subjected to crown fire and experienced near 100% mortality.

Figure 4 - Areas thinned in 2014-2015 experienced high intensity surface fires that consumed most of the understory fuels and severely scorched the crowns of the residual trees. Only an estimated 5 to 10% of the trees in the thinned areas will survive.

3. **Location of project:**

The WKWMA is located near the community of West Kootenai and about 6.5 miles north of Rexford, Montana, in Lincoln County (see Vicinity Map below). The property lies on the eastern edge of the Purcell Mountains and is 3 miles west of Lake Koocanusa. The northern boundary of the WKWMA is the Canadian border. The project area includes portions of Sections 3, 4, & 10 of Township 37 North, Range 28 W (see Project Map below).

4. **Agency authority for proposed action:**

§ 87-1-201 (9)(a)(iv), MCA requires FWP to address fire mitigation, pine beetle infestation, and wildlife habitat enhancement, giving priority to forested lands in excess of 50 contiguous acres in any state park, fishing access site, or wildlife management area under the department's jurisdiction.

§ 87-1-621, MCA established a special revenue account, called the forest management account, consisting of money deposited into the account from forest management projects. Funds from this account must be used to implement forest management projects. Revenue generated from this project would fund future rehabilitation, forest management, and habitat enhancement work on the WKWMA and other FWP properties across the state.

The Fish and Wildlife Commission endorsed FWP's proposal to proceed with an environmental analysis and public review of this project at their October 12, 2017, meeting.

5. **Project sponsor:** Not applicable

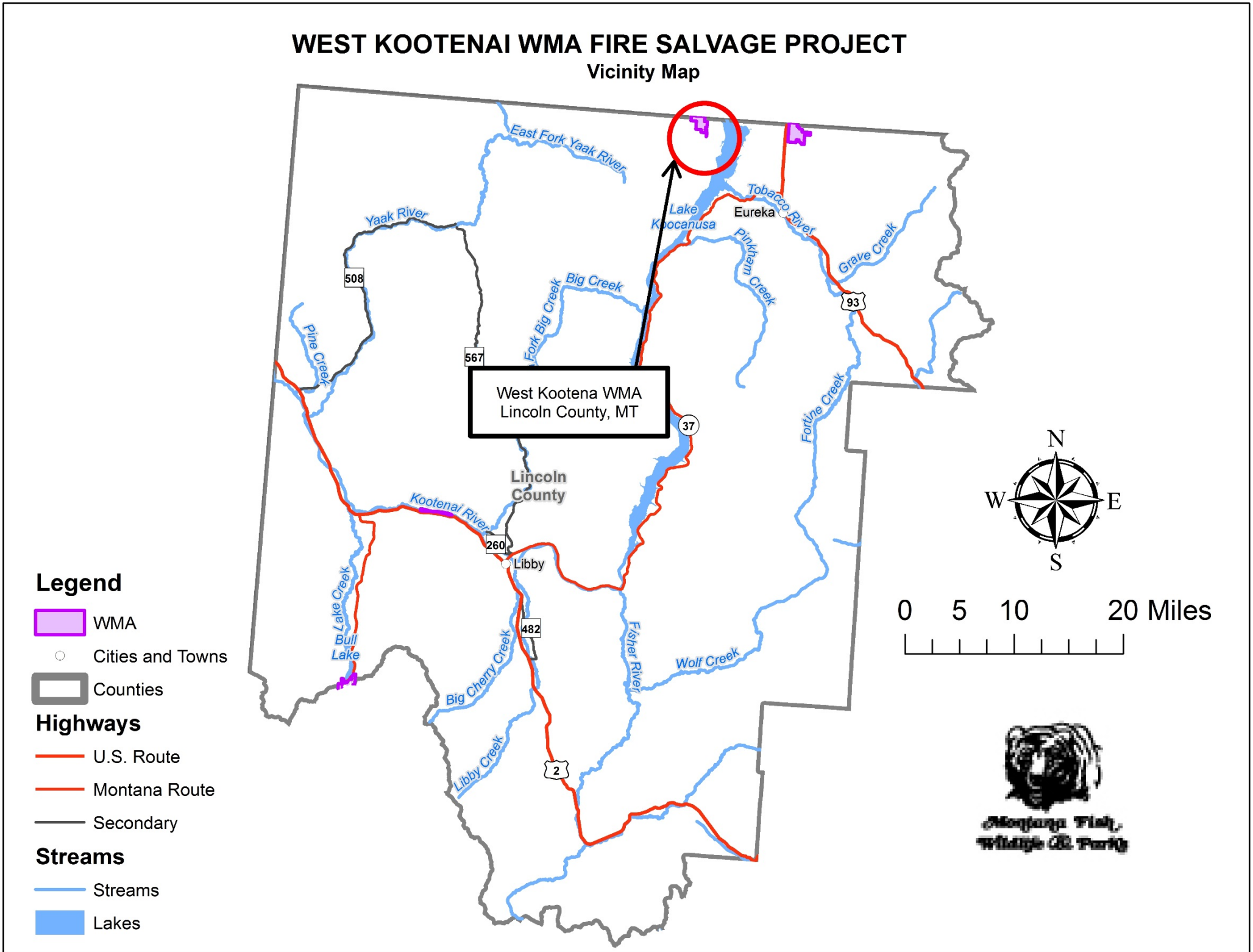
6. **Anticipated schedule:**
   - Public comment period: October 25 – November 8, 2017
   - Decision notice (pending Fish & Wildlife Commission approval) completed and signed: Week of November 13, 2017
   - Final Fish & Wildlife Commission approval: December 8, 2017
   - Estimated commencement date: December 15, 2017
   - Estimated completion date: July 15, 2019
   - Current status of project design (% complete): 95%

7. **Project size:**

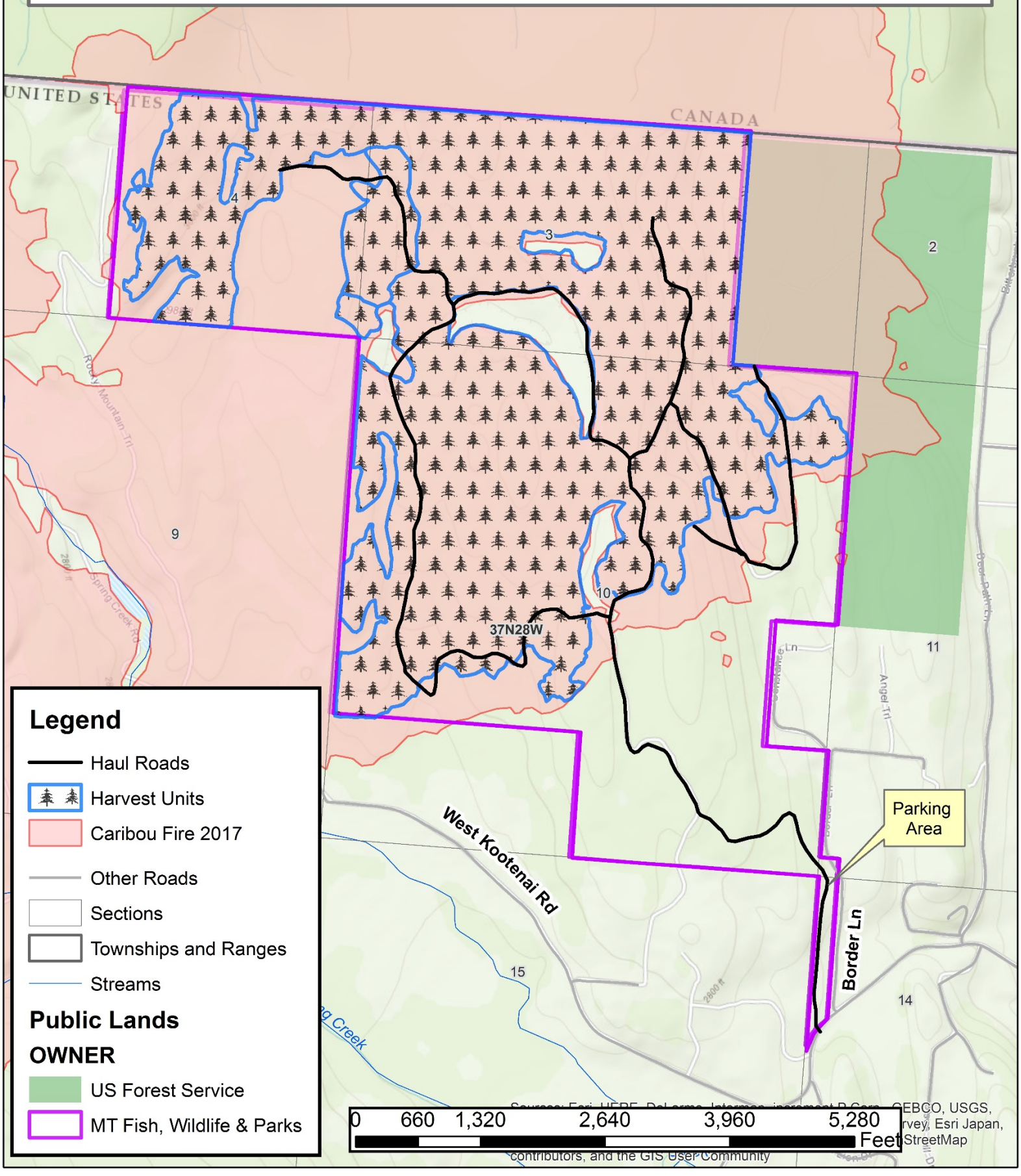
	Acres		Acres
a) Developed:		(d) Floodplain	0
Residential	0		
Industrial	0	(e) Productive:	
(existing shop area)		Irrigated cropland	0
(b) Open Space/Woodlands/	506	Dry cropland	0
Recreation		Forestry	506
(c) Wetlands/Riparian	0	Rangeland	0
Areas		Other	0

WEST KOOTENAI WMA FIRE SALVAGE PROJECT

Vicinity Map



West Kootenai WMA Fire Salvage Project
Sections 3, 4, & 10 - T37N - R28W
Project Map



8. **Listing of any other local, state or federal agency that has overlapping or additional jurisdiction:**

   (a) **Permits:** N/A

   (b) **Funding:** Costs to FWP for implementing the proposed action are expected to be covered by the sale of merchantable timber byproduct. Any revenue in excess of project costs would be deposited in the Forest Management Account pursuant to the provisions of § 87-1-621, MCA.

   (c) **Other overlapping jurisdictional responsibilities:**

Agency Name:	Type of Responsibility:
U.S. Forest Service	Fire Protection
Lincoln County	Weed Management
Montana State Historic Preservation Office	Cultural and Historic Resources

9. **Description and analysis of reasonable alternatives:**

Alternative A: No Action

No salvage timber harvesting would be implemented on the WKWMA at this time. FWP would not generate revenue from timber harvest for the Forest Management Account.

Alternative B: Proposed Action

In order to avoid an accumulation of downed timber that could preclude ungulate movement across the landscape, promote natural regeneration of the forest where possible, and complete the work while the value of timber can cover the cost of the treatment, FWP would implement the following activities on the 917-acre WKWMA:

- Salvage timber harvesting and sale of approximately 1.62 million board feet of merchantable timber on 506 acres of conifer forest burned in the Caribou Fire with the following retention guidelines:
  - Western larch with live crowns are marked to leave with blue horizontal band of paint and vertical butt mark.
  - Leave trees greater than 14" DBH with any live crown.
  - Leave trees less than 14" DBH with 10% live crown ratio (% of total height).
  - Leave large legacy trees and snags (old trees left from original harvest in 1930s).
  - Leave all submerchantable trees, snags, and downed logs.
  - Leave trees with broken, forked, or deformed tops or otherwise cull trees.
  - When the butt log is highly defective (crook, sweep, char, etc.) the tree may be cut off above the defect and left standing as a snag.
- Road maintenance and grass seeding on 5.7 miles of existing road.
- Retain 56 acres of snag patches, varying in size from 1 to 5 acres, to reduce sight distances and provide habitat diversity for a variety of wildlife species.

- An additional 37 acres of snag patches would be retained in areas with slopes greater than 35%.
- Approximately 108 acres of areas affected by low-intensity fire, where mortality was less than 20%, would be retained.
- Slash concentrations must meet or exceed Montana's State Hazard Reduction Law. Slash concentrations exceeding this level shall be lopped and scattered or piled.
- Removal from the site of fine branches and leafy material shall be minimized for nutrient retention. Trees that have needles present should be delimbed or have slash return skidded and scattered in the unit.
- 5 to 10 tons of downed woody material larger than 3 inches in diameter shall be left scattered through the units.

Under Alternative B, the proposed action, FWP would advertise and award a timber sale contract to the highest responsible bidder in accordance with state processes and procedures. The timber sale purchaser would be required to abide by Montana Forestry BMPs and all applicable forest practices laws. FWP's forester and area wildlife biologist would oversee contract administration to ensure utilization, resource protection, road maintenance, and reclamation measures are adhered to and that FWP receives fair market value for timber sold from state land. Timber harvesting would commence as early as December 2017 and may continue through March 2019.

See the attached Silvicultural Prescription at the end of this EA for more details.

Regardless of the alternative chosen, FWP would continue to manage the WKWMA for wildlife and compatible recreation activities and would evaluate the need to replant trees within 3 years, revegetate severely burned and disturbed areas, and/or conduct noxious weed management treatments.

PART II. ENVIRONMENTAL REVIEW CHECKLIST

1. Evaluation of the impacts of the Proposed Action, including secondary and cumulative impacts on the Physical and Human Environments.

A. PHYSICAL ENVIRONMENT

1. LAND RESOURCES Will the proposed action result in:	IMPACT					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Soil instability or changes in geologic substructure?		X				
b. Disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil, which would reduce productivity or fertility?			X		Yes	1b.
c. Destruction, covering, or modification of any unique geologic or physical features?		X				
d. Changes in siltation, deposition, or erosion patterns that may modify the channel of a river or stream or the bed or shore of a lake?		X				
e. Exposure of people or property to earthquakes, landslides, ground failure, or other natural hazard?		X				
f. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources:

1b. Timber harvest would adhere to Montana Forestry BMPs to minimize soil compaction and displacement. Ground-based equipment would be restricted to periods of frozen or snow-covered conditions. Existing skid trails would be utilized if they are in suitable locations to minimize soil physical disturbance.

2. AIR Will the proposed action result in:	IMPACT					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Emission of air pollutants or deterioration of ambient air quality? (Also see 13c.)			X		Yes	2ab.
b. Creation of objectionable odors?			X		Yes	2ab.
c. Alteration of air movement, moisture, or temperature patterns or any change in climate, either locally or regionally?		X				
d. Adverse effects on vegetation, including crops, due to increased emissions of pollutants?		X				
e. For P-R/D-J projects, will the project result in any discharge, which will conflict with federal or state air quality regs? (Also see 2a.)		X				
f. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Air:

2ab. Slash pile burning would introduce particulate matter into the local airshed which may temporarily affect local air quality. The majority of slash and submerchantable material would be left on the forest floor to minimize the amount of slash to be piled and burned. Burning would be conducted in accordance with open burning timing restrictions and comply with slash treatment regulations. Dust may be created from log hauling on existing native surface road. Contract clauses would provide for the use of dust abatement or requiring trucks to reduce speed, if necessary.

3. WATER Will the proposed action result in:	IMPACT					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Discharge into surface water or any alteration of surface water quality, including but not limited to temperature, dissolved oxygen, or turbidity?		X				
b. Changes in drainage patterns or the rate and amount of surface runoff?			X		Yes	3b.
c. Alteration of the course or magnitude of floodwater or other flows?		X				
d. Changes in the amount of surface water in any water body or creation of a new water body?		X				
e. Exposure of people or property to water-related hazards such as flooding?		X				
f. Changes in the quality of groundwater?		X				
g. Changes in the quantity of groundwater?		X				
h. Increase in risk of contamination of surface or groundwater?		X				
i. Effects on any existing water right or reservation?		X				
j. Effects on other water users as a result of any alteration in surface or groundwater quality?		X				
k. Effects on other users as a result of any alteration in surface or groundwater quantity?		X				
l. For P-R/D-J, will the project affect a designated floodplain? (Also see 3c.)		X				
m. For P-R/D-J, will the project result in any discharge that will affect federal or state water quality regulations? (Also see 3a.)		X				
n. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Water Resources:

3b. This project is located far from any water resources. Skid trails associated with timber harvest have the potential to disturb soil and vegetation cover resulting in minor and temporary changes to drainage patterns and surface runoff. The project would implement Montana Forestry BMPs to minimize any potential risk of sediment delivery to water resources.

4. VEGETATION Will the proposed action result in?	IMPACT					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Changes in the diversity, productivity, or abundance of plant species (including trees, shrubs, grass, crops, and aquatic plants)?			X		No	4ab.
b. Alteration of a plant community?			X		No	4ab.
c. Adverse effects on any unique, rare, threatened, or endangered species?		X				
d. Reduction in acreage or productivity of any agricultural land?		X				
e. Establishment or spread of noxious weeds?			X		Yes	4e.
f. For P-R/D-J, will the project affect wetlands, or prime and unique farmland?		X				
g. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Vegetation:

4ab. The project would decrease the number of dead trees (snags) on the WKWMA. Live trees and snags would be retained as described in Part I, Section 9, Alternative B (Proposed Action). Approximately 37 acres of areas with slopes greater than 35% are not included and would provide unaltered snag habitat. Additionally, 56 acres of unaltered snag habitat would be retained in variably-sized patches of 1 to 5 acres to reduce sight distances and provide habitat diversity. The majority of limbs and tops would be retained in the treatment units allowing any remaining seed in cones to be dispersed to aid in natural regeneration of trees.

4e. Ground disturbance associated with road use and maintenance and operating equipment off-road has the potential to create areas that would allow for the establishment or spread of noxious weeds. Noxious weed spread would be mitigated by requiring equipment to be washed and inspected before entering the WKWMA, minimizing ground disturbance through the implementation of Montana Forestry BMPs, reseeding disturbed areas with a native grass seed mix, and treating affected areas or areas at risk with herbicide for up to 3 years posttreatment.

5. FISH/WILDLIFE Will the proposed action result in:	IMPACT					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Deterioration of critical fish or wildlife habitat?		X				
b. Changes in the diversity or abundance of game animals or bird species?			X		Yes	5bc.
c. Changes in the diversity or abundance of nongame species?			X		Yes	5bc.
d. Introduction of new species into an area?		X				
e. Creation of a barrier to the migration or movement of animals?		X				
f. Adverse effects on any unique, rare, threatened, or endangered species?		X				
g. Increase in conditions that stress wildlife populations or limit abundance (including harassment, legal or illegal harvest, or other human activity)?			X		No	5g.
h. For P-R/D-J, will the project be performed in any area in which T&E species are present, and will the project affect any T&E species or their habitat? (Also see 5f.)			X		No	5h.
i. For P-R/D-J, will the project introduce or export any species not presently or historically occurring in the receiving location? (Also see 5d.)		X				
j. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Fish and Wildlife:

5bc. Major impacts occurred to nearly all wildlife species when fire swept through the area in September 2017. One species that may be negatively affected by removal of fire-killed trees in the Project Area is the black-backed woodpecker, which prefers areas burned at stand-replacement intensity (generally in low-mid elevation forests) that possess at least 40 trees per acre that are ≥9 inches diameter (Saab and Dudley 1998). The project would retain dead trees (snags) at a density greater than what was available pre-fire, but less than what is currently available on the WKWMA. However, trees greater 14 inches with any live crown and all trees with greater than 10% live crown would be retained. In addition, in heavily burned areas, approximately 93 acres of unaltered snag habitat with an estimated 400 snags per acres (all size classes) would be retained in order to provide snags and downed logs for structural diversity and habitat for cavity-dependent species. These areas include 37 acres of areas with slopes greater than 35% and 56 acres of patches varying in size of 1 to 5 acres. In addition, there are currently over 23,000 acres of burned habitat potentially available to black-backed woodpeckers in the immediate area that were not available 3 months ago. While some of this area may be logged to salvage dead trees, most would not.

5g. Trees would be harvested during winter months to minimize soil disturbance. Given the burned condition of the area, animals would be concentrated in patches of unburned timber. Harvested trees and other equipment would be transported through only a small portion of the WMA that did not burn. While there may be some disturbance to wintering deer and elk, the lack of available winter cover would likely increase the likelihood that they would remain in scattered patches of unburned timber during logging operations.

5h. Grizzly bears are present in the general area during their nonhibernating period. This project is not expected to affect them negatively since the majority of activity would occur when they are in their winter dens at much higher elevations.

B. HUMAN ENVIRONMENT

6. NOISE/ELECTRICAL EFFECTS Will the proposed action result in:	IMPACT					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Increases in existing noise levels?			X		No	6ab.
b. Exposure of people to severe or nuisance noise levels?			X		No	6ab.
c. Creation of electrostatic or electromagnetic effects that could be detrimental to human health or property?		X				
d. Interference with radio or television reception and operation?		X				
e. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Noise/Electrical Effects:

6ab. Residences are located within 1/2 mile from the project area. The WKWMA is open to the public from May 15 through December 2 annually and is near the community of West Kootenai, Montana. Public access to the WKWMA is by nonmotorized travel, and the area is used in the spring through fall by the public for hiking, hunting, and wildlife viewing. Logging and trucking equipment would increase noise levels within the project area during the operating periods.

7. LAND USE Will the proposed action result in:	IMPACT					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Alteration of or interference with the productivity or profitability of the existing land use of an area?		X				
b. Conflict with a designated natural area or area of unusual scientific or educational importance?		X				
c. Conflict with any existing land use, the presence of which would constrain or potentially prohibit the proposed action?		X				
d. Adverse effects on or relocation of residences?		X				
e. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Use: None

8. RISK/HEALTH HAZARDS Will the proposed action result in:	IMPACT					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Risk of an explosion or release of hazardous substances (including, but not limited to oil, pesticides, chemicals, or radiation) in the event of an accident or other forms of disruption?		X				
b. Affect an existing emergency response or emergency evacuation plan, or create a need for a new plan?		X				
c. Creation of any human health hazard or potential hazard?		X				
d. For P-R/D-J, will any chemical toxicants be used? (Also see 8a.)		X				
e. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Risk/Health Hazards: None

9. COMMUNITY IMPACT Will the proposed action result in:	IMPACT					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Alteration of the location, distribution, density, or growth rate of the human population of an area?		X				
b. Alteration of the social structure of a community?		X				
c. Alteration of the level or distribution of employment or community or personal income?			X		No	9cde.
d. Changes in industrial or commercial activity?			X		No	9cde.
e. Increased traffic hazards or effects on existing transportation facilities or patterns of movement of people and goods?			X		No	9cde.
f. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Community Impact:

9cde. This project would create local jobs while the project is ongoing, thus benefiting the successful contractor. Log hauling and contractor traffic would increase during the project. Roads and other infrastructure that would be used by contractors were designed (and would be maintained) to support commercial logging and log transport activities.

10. PUBLIC SERVICES/TAXES/UTILITIES Will the proposed action result in:	IMPACT					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Will the proposed action have an effect upon or result in a need for new or altered governmental services in any of the following areas: fire or police protection, schools, parks/recreational facilities, roads or other public maintenance, water supply, sewer or septic systems, solid waste disposal, health, or other governmental services? If any, specify.		X				
b. Will the proposed action have an effect upon the local or state tax base and revenues?			X		No	10b.
c. Will the proposed action result in a need for new facilities or substantial alterations of any of the following utilities: electric power, natural gas, other fuel supply or distribution systems, or communications?		X				
d. Will the proposed action result in increased use of any energy source?			X		No	10d.
e. Define projected revenue sources.			X			10e.
f. Define projected maintenance costs.			X			10f.
g. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Public Services/Taxes/Utilities:

10b. The project would increase state and local tax revenues from the sale of fuel and equipment and from employees' income.

10d. Fuel and electricity would be required to treat stands and process the timber byproduct.

10e. Depending on the market conditions of logging costs, hauling costs, and delivered log prices for forest products at the time the timber is sold, the project may generate revenue for FWP's Forest Management Account to be used for future forest management projects.

10f. Posttreatment maintenance costs may be incurred for slash disposal, revegetation, and noxious weed treatments. FWP would provide funding for maintenance costs from its Forest Management Account.

11. AESTHETICS/RECREATION Will the proposed action result in:	IMPACT					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Alteration of any scenic vista or creation of an aesthetically offensive site or effect that is open to public view?			X		No	1a.
b. Alteration of the aesthetic character of a community or neighborhood?		X				
c. Alteration of the quality or quantity of recreational/tourism opportunities and settings? (Attach Tourism Report.)		X				
d. For P-R/D-J, will any designated or proposed wild or scenic rivers, trails, or wilderness areas be impacted? (Also see 11a, 11c.)		X				
e. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Aesthetics/Recreation:

1a. Some harvested areas may be visible from adjacent private residences and would be noticeably more open compared to unharvested areas. The aesthetic value of these areas has already been severely altered as a result of the Caribou Fire.

12. CULTURAL/HISTORICAL RESOURCES Will the proposed action result in:	IMPACT					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Destruction or alteration of any site, structure, or object of prehistoric, historic, or paleontological importance?		X				
b. Physical change that would affect unique cultural values?		X				
c. Effects on existing religious or sacred uses of a site or area?		X				
d. For P-R/D-J, will the project affect historic or cultural resources? Attach SHPO letter of clearance. (Also see 12.a.)						
e. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Cultural/Historical Resources: None

SIGNIFICANCE CRITERIA

13. SUMMARY EVALUATION OF SIGNIFICANCE Will the proposed action, considered as a whole:	IMPACT					
	Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Have impacts that are individually limited, but cumulatively considerable? (A project or program may result in impacts on two or more separate resources that create a significant effect when considered together or in total.)		X				
b. Involve potential risks or adverse effects, which are uncertain but extremely hazardous if they were to occur?		X				
c. Potentially conflict with the substantive requirements of any local, state, or federal law, regulation, standard, or formal plan?		X				
d. Establish a precedent or likelihood that future actions with significant environmental impacts will be proposed?		X				
e. Generate substantial debate or controversy about the nature of the impacts that would be created?		X				
f. For P-R/D-J, is the project expected to have organized opposition or generate substantial public controversy? (Also see 13e.)						
g. For P-R/D-J, list any federal or state permits required.						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Significance Criteria: None

PART III. PUBLIC PARTICPATION AND COLLABORATORS

1. **Public involvement**:

The public will be notified in the following manners to comment on this current environment assessment (EA):

- Public notices in each of these papers: *Tobacco Valley News, The Western News, Flathead Beacon, and the Kootenai Valley Record.*
- Public notice on the Fish, Wildlife & Parks web page: http://fwp.mt.gov.
- Copies of this EA may be obtained by mail from FWP Region 1 Office, 490 N. Meridian Road, Kalispell, MT 59901; 406-752-5501; or by emailing nivy@mt.gov.

Comments should be directed to Tim Thier, PO Box 52, Trego, MT 59934; 406-882-4697; or email to tthier@interbel.net. Comments must be received by FWP no later than 5:00 p.m. on November 8, 2017.

Notice of this environmental assessment and how to access a copy of the draft will be distributed to the neighboring landowners and interested parties to ensure their knowledge of the proposed project.

This level of public notice and participation is appropriate for a project of this scope, having limited impacts, many of which can be mitigated.

PART V. EA PREPARATION

1. **Based on the significance criteria evaluated in this EA, is an EIS required?** No, based upon the above assessment, which has identified a limited number of minor impacts to the physical and human environments that would be either for a short duration or that the effects of the proposed project can be mitigated below the level of significance, an EIS in not required, and an environmental assessment is the appropriate level of review.

2. **Person responsible for preparing the EA:**

Tim Thier, Area Wildlife Biologist, Trego, MT; 406-882-4697
Jason Parke, Forester, Helena, MT; 406-444-7329

3. **List of entities consulted during preparation of the EA:**

Not applicable

WEST KOOTENAI WMA FIRE SALVAGE PROJECT
SILVICULTURAL PRESCRIPTION

Unit Number(s): ALL **Location:** S 3, 4 & 10 - T37N - R28W **Acres:** 562

Elevation: 2,700-3,200 **Slope:** 10% (some short pitches >35%) **Aspect(s):** E, SE

Habitat type: PSME/VACA (250)

Soils: 324 – Typic Eutrochrepts, moraines

DESCRIPTION OF STAND(S):

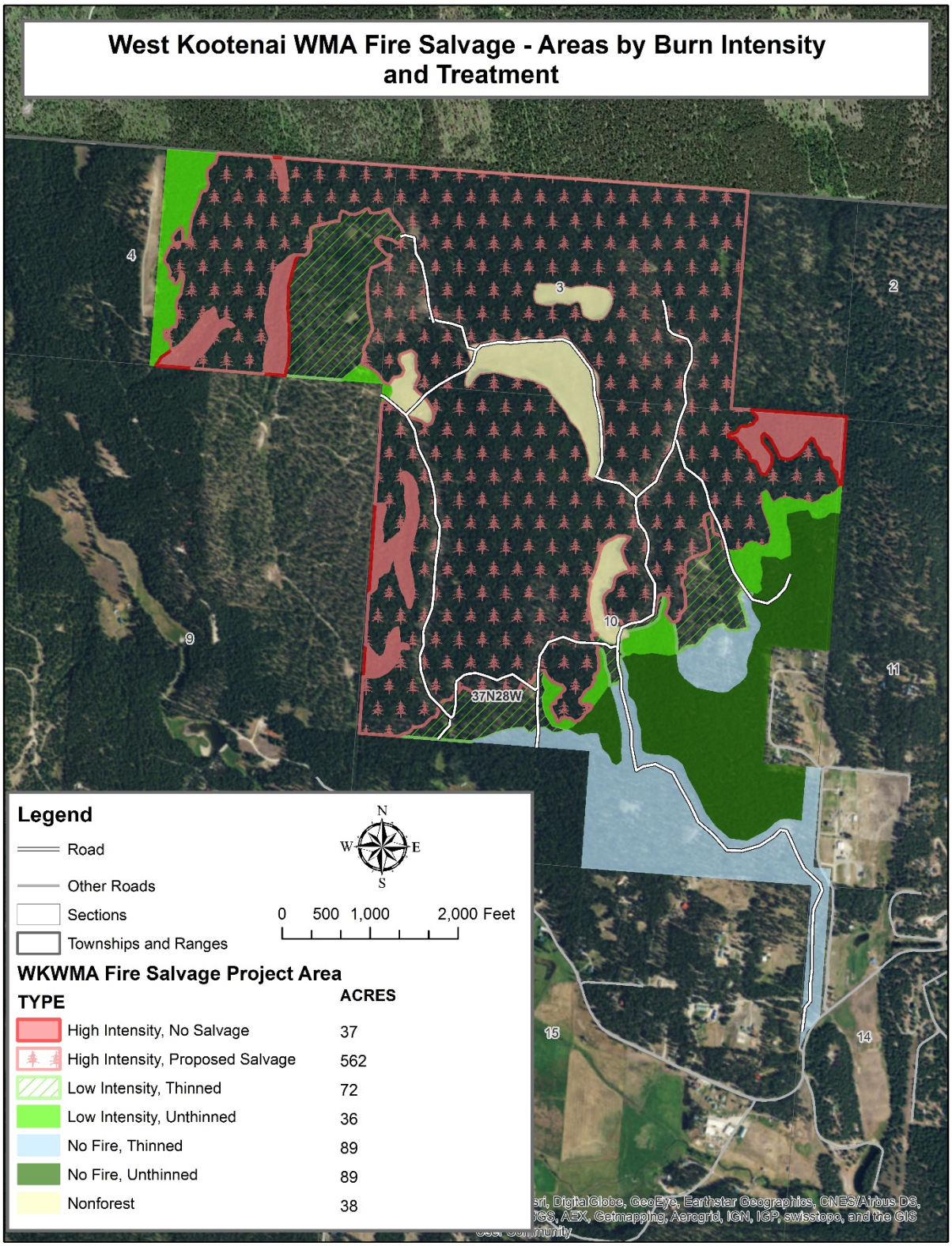
Unit location/access: The West Kootenai Wildlife Management Area (WKWMA) is located near the community of West Kootenai and about 6.5 miles north of Rexford, Montana in Lincoln County. The property lies on the eastern edge of the Purcell Mountains and is 3 miles west of Lake Koocanusa. The northern boundary of the WKWMA is the Canadian border. Access is from the West Kootenai Road and existing logging roads previously established on the WMA.

Forest composition, size class, and stocking: According to plot data from the West Kootenai WMA Forest Management Plan (FWP 2011), prior to the 2014-2015 thinning project, the species composition was predominantly *Pseudotsuga menziesii* (Douglas-fir) - 88%, with some *Larix occidentalis* (western larch) - 8%, *Pinus ponderosa* (ponderosa pine) - 3%, and trace amounts of *Pinus contorta* (lodgepole pine) - <1%, and *Picea engelmannii* (Engelmann spruce) - <1%. All stands could be classified as sawtimber size class based on those trees representing the greatest proportion of total crown cover; however by trees per acre, seedling/sapling and pole-sized trees far outweigh the sawtimber-sized trees. Stocking for all stands prior to thinning was high (>75% crown cover). In terms of trees per acre, the stands averaged 400 trees per acre prior to thinning. Trees less than 10 inches DBH accounted for approximately 350 to 375 trees per acre while trees greater than 11 inches DBH accounted for 25 to 50 trees per acre.

In 2014-2015, 250 acres of stands were thinned, retaining the majority of *Larix occidentalis* and *Pinus ponderosa*; primarily focusing on removal of suppressed *Pseudotsuga menziesii*. In the thinned areas, the percent species composition of *Pseudotsuga menziesii* was reduced slightly. The size class of thinned stands remained sawtimber and the stocking was reduced from high to medium (26 to 50% crown cover).

The 2017 Caribou Fire burned approximately 745 acres of the WKWMA, resulting in very high levels of mortality on the 599 acres of forest. About 38 acres of nonforest (meadows) also burned. Approximately 108 acres of the burn was low intensity where conditions changed and the fire intensity was lower, resulting in mortality of around 10-20% in those areas. The areas of low intensity fire occurred along the property line in the extreme NW corner (W1/2E1/2 of Section 4) of the WKWMA, in a portion of a thinned unit in 2014-2015 (known as unit 4 in the E1/2 of Section 4), and in the near the southeastern side of the WKWMA (N1/2SW1/4; NW1/4,NW1/4; and NW1/4,NE1/4 of Section 10). By ocular estimates, less than 3% of the trees survived in the 506 (excluding 56 acres of leave patches) acres proposed for salvage or in other words, less than 12 trees per acre survived. See Figure 3 for details of the acres burned by intensity, previous thinning units, and the proposed salvage area.

Figure 3 - Map of Areas by Burn Intensity and Treatment



Forest density, structure, and age: An average of 120 BA/acre was present prior to thinning. The basal area of thinned stands was reduced to 90-110 BA/acre. The structure class for all stands prior to thinning was stem exclusion. The average age was 50 to 65 years with very few, scattered legacy trees exceeding 200 years old.

After the fire, approximately 599 acres are in the nonstocked structure class, meaning there is less than 5% live tree crown cover. There are 161 acres of thinned stands (both burned and unburned) in the understory reinitiation structure class and there are 125 acres (both burned and unburned) remaining in the stem exclusion structure class.

Of the 599 acres of high severity burn, 89 acres were thinned in 2014-2015 and 510 acres were unthinned.

Snags and coarse woody debris: Prior to thinning, approximately 2 to 5% of standing trees were dead (snags), accounting for about 8 to 20 snags per acre. In 2014-2015 thinning units, all snags greater than 10 inches were retained and 5 to 10 tons of down logs were retained. Since the fire, in high intensity burned and unthinned areas (accounting for approximately 510 acres), there are greater than 350 snags per acre. Of these 350 snags per acre, only about 20 to 30 are greater than 11 inches DBH.

No estimate of downed wood in unthinned areas prior to the fire is available. Due to the nature of the fire and consumption of most down material, it is estimated that the current amount of down logs is less than 5 tons per acre. Severe root damage occurred as a result of the fire and during the recon of the salvage areas, snags were already starting to fall in October 2017.

Insect and disease: Insects and diseases affecting trees of commercial importance that were present at endemic levels at the time of writing the 2011 forest management plan included *Choristoneura occidentalis* (western spruce budworm), *Dendroctonus pseudotsugae* (Douglas-fir beetle), *Dendroctonus ponderosae* (mountain pine beetle), *Phellinus pini* (red ring rot), *Phaeolus schweinitzii* (root and butt rot), and *Arceuthobium douglasii* (Douglas-fir dwarf mistletoe), and *A. laric*s (western larch dwarf mistletoe). These afflictions were relatively benign at this time. After the fire it is expected that there would be a significant increase in several insects and diseases. Wood boring insects such as *Buprestidae spp.* (flatheaded borers), *Cerambycidae spp.* (roundheaded borers), *Scolytidae spp.* (ambrosia beetles), and *Siricidae spp.* (wood wasps) would begin to infest fire-killed trees in the spring of 2018. *Cryptoporus volvatus* (pouch fungus) follows within one year of attack by wood boring insects. *Fomitopsis pinicola* (red belt fungus) and *Trichaptum abietinum* (Dicks.) Ryvarden (purplepore bracket) decays both sapwood and heartwood and would begin to decay sapwood starting in year one to three. Bark beetles, especially *Dendroctonus pseudotsugae*, would attack fire injured trees and may result in outbreaks to adjacent undamaged stands.

Fire regime, succession, and fire risk: The entire WKWMA is a *Pseudotsuga menziesii*/*Vaccinium caespitosum* (*PSME/VACA*) habitat type (Pfister et al. 1977) and is in fire group 6 – moist Douglas-fir habitat types (Fischer and Bradley 1987), which were historically characterized by frequent, low to mixed severity fires that favored the development of open stands of mature *Larix occidentalis* and *Pinus ponderosa* over *Pseudotsuga menziesii*. Pfister et al (1977) described stands is the *PSME/VACA* habitat type:

> "The open, park-like conditions and large fire-scarred seral trees found in undisturbed stands of *PSME/VACA* suggest a history of frequent ground fires. In many cases, *Pseudotsuga* has only recently begun to regenerate, because of past fires or perhaps due to moisture depletion in the surface soil caused by heavy stocking of old-growth *Pinus ponderosa* and *Larix occidentalis* and a dense mat of undergrowth."

This appears to have been the case prior to initial logging in the stand, based on the species composition of stumps in the WKWMA and by local knowledge of the neighboring landowner, John Doble. It is also very likely that Native American burning created and maintained the stand conditions described by Pfister et al. (1977) as it is mentioned that when David Thompson entered this area in the spring of 1808, they set grass fires which "emulated a common native practice" (Nisbet 1994). Based on the tree ages described in the 2011 forest management plan, logging likely occurred in the late 1930s. This is consistent with an era of logging occurring around the Eureka area to supply timbers to the mines in Butte. Slab piles were left behind from portable milling operations which were found within the WKWMA and are common throughout the low elevation forested areas surrounding the Tobacco Valley. This logging removed the "old-growth" *Larix occidentalis* and *Pinus ponderosa*, which favored the establishment of *Pseudotsuga menziesii* and is consistent with how Pfister et al. (1977) described management of the *PSME/VACA* habitat type stating "overstory removal will lead to an increasing dominance by *Pseudotsuga*." Through fire exclusion, dense stands of multi-storied *Pseudotsuga menziesii* would develop approaching a (therotical) climax state until stand replacement occurs. If fire exclusion is maintained, this cycle would perpetuate itself on 50 to 150-year cycles or perhaps more frequently if climate projections are realized. Frequent stand replacement events (without artificial regeneration of trees) may lead to development of a grassland if trees do not reach sexual maturity (a minimum of 12 to 15 years for *Pseudotsuga menziesii*) before the next stand replacement event.

Rare plants and noxious weeds: No known rare plants exist within the stand. Noxious weeds include primarily *Centaurea stoebe* (spotted knapweed), *Leucanthemum vulgare* (oxeye daisy), and *Cynoglossum officinale* (houndstongue) along and adjacent to the road.

TREATMENT OBJECTIVES:

Short term:

- Avoid accumulation of down timber that could preclude ungulate movement across the landscape
- Create favorable conditions for conifer regeneration
- Recover merchantable volume of fire-killed trees through salvage harvest to generate revenue for FWP's Forest Management Account
- Retain submerchantable trees for future down woody debris to deter browse of conifer regeneration
- Retain 56 acres of snag patches, varying in size from 1 to 5 acres, to reduce sight distances and provide habitat diversity for a variety of wildlife species

Long term:

- Promote development of mature forest structure on big game winter range favored by elk and deer for thermal cover, snow intercept, and security
- Manage for resilient and resistant forests by promoting the development of ecologically appropriate forest stand structure and species composition
- Maintain fuel break areas along roads and adjacent private lands to provide defensible areas in the event of future wildfire events

PRESCRIBED TREATMENT:

Silvicultural System: Uneven-aged

Prescription(s):

- Salvage – Remove dead and dying trees to recover maximum value of merchantable forest products before value is lost due to insects and decay

Residual trees/marking guidelines:

- Western larch with live crowns marked to leave with **blue** horizontal band of paint and vertical butt mark (ignore old blue paint from previous project)
- Leave 10% of the area unharvested (56 acres) in variably sized patches ranging from 1 to 5 acres to reduce sight distances with the unit
- Leave trees greater than 14" DBH with any live crown
- Leave trees less than 14" DBH with 10% live crown ratio (% of total height)
- Leave large legacy trees and snags (old trees left from original harvest in 1930's)
- Leave all submerchanable trees, snags, and downed logs
- Leave trees with broken, forked, or deformed tops or otherwise cull trees
- When the butt log is highly defective (crook, sweep, char, etc.) the tree may be cut off above the defect and left standing as a snag

Harvesting system: Ground-based yarding, areas greater than 35% slope excluded

Slash treatment:

- Slash concentrations must meet or exceed Montana's State Hazard Reduction Law. Slash concentrations exceeding this level shall be lopped and scattered or piled
- Removal from the site of fine branches and leafy material shall be minimized for nutrient retention. Trees that have needles present should be delimbed or have slash return skidded and scattered in the unit
- 5 to 10 tons of downed woody material larger than 3 inches in diameter shall be left scattered through the units
- All slash piles would be constructed in openings, away from live trees, and shall be free of dirt and other debris

SCHEDULE OF TREATMENTS:

- December 1, 2017 through March 1, 2018: Winter logging operating period
- December 1, 2018 through March 1, 2019: Winter logging operating period
- Summer/Fall 2019: Final clean-up, BMPs, and grass seeding. Burn slash piles (if applicable)
- Summer 2020: Monitor weeds
- Summer 2022: Regeneration survey, monitor weeds
- Spring 2024: Tree planting (if planting is required based on regeneration survey)
- Spring 2025: Survival survey (if planted)
- Summer 2027: Regeneration survey
- Summer 2040: Stand exam
- Summer 2060: Stand exam

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